Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An electronic circuit for sensing an output of a sensor, the electronic circuit comprising:

a substrate;

at least two electrode pairs formed on a first surface of the substrate for sensing a parameter, each electrode pair having a first electrode and a second electrode, wherein the first electrode of each electrode pair wraps at least partially around the second electrode of its electrode pair; and

circuitry for processing the parameter,

wherein a layout of the ~~first electrode and the second electrode~~at least two electrode pairs minimizes cross coupling between at least one electrode of a ~~the~~ first electrode pair and at least one electrode of a ~~the~~ second electrode pair.

2. (Previously presented) The electronic circuit of Claim 1, wherein the first electrode of each electrode pair wraps around the second electrode of its electrode pair in a U-shaped fashion.

3. (Previously presented) The electronic circuit of Claim 1, wherein the first electrode of each electrode pair wraps around the second electrode of its electrode pair by surrounding three sides of the second electrode.

4. Cancelled.

5. (Previously presented) The electronic circuit of Claim 1, further comprising a reference electrode for setting a reference voltage for the at least two electrode pairs.

6. (Original) The electronic circuit of Claim 5, wherein the reference voltage set on the reference electrode is about 0.5 volts.

7. (Previously presented) The electronic circuit of Claim 1, wherein the circuitry comprises

a line interface for interfacing with input/output lines;

a rectifier in parallel with the line interface;

a counter connected to the line interface; and

a data converter connected to the counter and the at least two electrode pairs.

8. (Original) The electronic circuit of Claim 7, further comprising control logic connected to the counter and the line interface.

9. (Original) The electronic circuit of Claim 8, wherein the control logic comprises

a state machine; and

a state decoder connected to the state machine.

10. (Original) The electronic circuit of Claim 8, wherein the control logic comprises a microprocessor.

11. (Original) The electronic circuit of Claim 7, wherein the rectifier transfers power from communication pulses to a capacitor.

12. (Original) The electronic circuit of Claim 11, wherein the capacitor powers the electronic circuit using power stored from the communication pulses.

13. (Original) The electronic circuit of Claim 7, wherein the data converter is an analog-to-digital converter.

14. (Previously presented) The electronic circuit of Claim 7, wherein the data converter is a voltage-to-frequency converter.

15. (Original) The electronic circuit of Claim 7, wherein the data converter is a current-to-frequency converter.

16. (Original) The electronic circuit of Claim 15, wherein an output of the current-to-frequency converter is scaled using a prescaler before connecting to the counter.

17. (Original) electronic circuit of Claim 16, wherein the prescaler is a divide-by-16 prescaler.

18. (Original) The electronic circuit of Claim 7, wherein the circuitry further comprises

a temperature sensor for reading a temperature of an environment; and

a voltage reference for applying a voltage to a reference electrode.

19. (Original) The electronic circuit of Claim 7, further comprising switched capacitor circuits for use as resistors in the electronic circuit.

20. (Previously presented)The electronic circuit of Claim 1, wherein the parameter sensed by the at least two electrode pairs is a physiological parameter.

21. (Original) The electronic circuit of Claim 20, wherein the physiological parameter sensed is glucose.

22. (Original) The electronic circuit of Claim 20, wherein the physiological parameter sensed is oxygen.

23. (Previously presented) The electronic circuit of Claim 1, wherein at least one of the first electrode and the second electrode is electroplated.

24. (Previously presented) The electronic circuit of Claim 1, wherein the first electrode is coplanar with the second electrode.

25. (Previously presented) The electronic circuit of Claim 1, wherein the first electrodes of the at least two electrode pairs are electronically coupled to each other.

26. (Currently Amended) An electronic circuit for sensing an output of a sensor, the electronic circuit comprising:

a substrate;

at least two electrode pairs formed on a first surface of the substrate for sensing a parameter, each electrode pair having a first electrode and a second electrode, wherein the first electrode of each electrode pair wraps at least partially around the second electrode of its electrode pair;

circuitry for processing the parameter, and

a reference electrode for setting a reference voltage for the at least two electrode pairs,

wherein a layout of the first electrode and the second electrode minimizes cross coupling between the first electrode and the second electrode~~The electronic circuit recited in claim 5~~, and

wherein the reference electrode is formed between the at least two electrode pairs.

27. (Previously presented) The electronic circuit recited in claim 1, further comprising a spacer covering the at least two electrode pairs.

28. (Previously presented) The electronic circuit recited in claim 27, wherein the spacer includes an area for containing a biomolecule such that the biomolecule is located adjacent to at least one of the at least two electrode pairs.

29. (Previously presented) The electronic circuit recited in claim 28, wherein the biomolecule is a glucose oxidase enzyme.

30. (Previously presented) The electronic circuit recited in claim 28, wherein the spacer comprises a material that is permeable to oxygen and is not permeable to the biomolecule.

31. (Previously presented) The electronic circuit recited in claim 1, wherein the first electrodes of each pair have a U-shape including an open end, the at least two electrode pairs being formed on the first surface of the substrate such that the open ends face in opposing directions.

32. (Currently Amended) An electronic circuit for sensing an output of a sensor, the electronic circuit comprising:

a substrate;

at least two electrode pairs formed on a first surface of the substrate for sensing a parameter, each electrode pair having a first electrode and a second electrode, wherein the first electrode of each electrode pair wraps at least partially around the second electrode of its electrode pair;

circuitry for processing the parameter, and

a reference electrode for setting a reference voltage for the at least two electrode pairs,

wherein a layout of the first electrode and the second electrode minimizes cross coupling between the first electrode and the second electrode~~The electronic circuit recited in claim 5~~,

wherein the reference electrode is disposed between and separates the at least two electrode pairs, and

wherein the first electrode of each of the at least two electrode pairs separates the reference electrode and the second electrode of each of the at least two electrode pairs.

33. (Previously Presented) The electronic circuit of Claim 32, wherein the reference electrode is rectangular.

34. (Previously Presented) The electronic circuit of Claim 32, wherein the second electrode is rectangular.

35. (Previously Presented) The electronic circuit of Claim 34, wherein the reference electrode is perpendicular to the second electrode.

36. (Previously Presented) The electronic circuit of Claim 32, wherein the second electrode is disposed within the boundaries of the first electrode.

37. (Previously Presented) The electronic circuit of Claim 36, wherein the second electrode is substantially parallel with at least one leg of the first electrode.

38. (Previously Presented) The electronic circuit of Claim 32, wherein the reference electrode is disposed perpendicularly to the second electrode of each of the at least two electrode pairs.

39. (New) The electronic circuit of Claim 1, further comprising a reference electrode separating the at least two electrode pairs.

40. (New) The electronic circuit of Claim 39, wherein the reference electrode is substantially rectangular.

41. (New) The electronic circuit of Claim 1, wherein the reference electrode is disposed substantially perpendicularly to at least one electrode of each of the at least two electrode pairs.